

# Evidence-based medicine Training: Kazakhstan experience

G. Kamalbekova<sup>a</sup> and M. Kalieva<sup>b,\*</sup>

<sup>a</sup>*JSC “Astana Medical University”, Research and Education Center of Evidence-Based Medicine, Astana, Republic of Kazakhstan*

<sup>b</sup>*Kazakh National Medical University named after SD Asfendiyarov, Clinical pharmacology and Pharmacotherapy Department, Almaty, Republic of Kazakhstan*

\*Corresponding author. E-mail: kalieva.1963@mail.ru

**BACKGROUND:** Understanding principles of evidence-based medicine is of vital importance for improving quality of care, promoting public health and health system development. Understanding principles of evidence-based medicine allows using the most powerful information source, which have ever existed in medicine.

**OBJECTIVE:** To evaluate the effectiveness of teaching Evidence-Based Medicine, including long-term outcomes of training.

**METHODS:** The study was conducted at the Medical University of Astana, where the Scientific and Educational Center of Evidence-Based Medicine was established in 2010 with the help of the corresponding project of the World Bank. The participants of the study were the faculty trained in Evidence-Based Medicine at the workshop “Introduction to Evidence-Based Medicine” for the period of 2010–2015 years. There were a total of 16 workshops during the period, and 323 employees were trained. All participants were asked to complete our questionnaire two times: before the training - pre-training (to determine the initial level of a listener) and after the training – post-training (to determine the acquired level and get the feedback). Questionnaires were prepared in such a way, that the majority of questions before and after training were identical. Thus, it provided a clear picture of the effectiveness of training. Questions in the survey were open-ended so that the respondents had the opportunity to freely and fully express their views. The main part of the questionnaires included the following questions: “Do you understand what evidence-based medicine is”, “how do you understand what the study design means”, “what is randomization”, “how research is classified”, “do you know the steps of decision-making according to Evidence-Based Medicine, list them”, “what literature do you prefer to use when searching for information (print, electronic, etc.)”, “what resources on the Internet do you prefer to use”.

**RESULTS:** Only 30–35% of respondents gave correct answers to the questions on understanding EBM, understanding study designs, randomization. There were no correct or complete answers to the question on study classification. Again, 35% of respondents provided correct answer to the question about the stages of decision-making process from the perspective of EBM, 65% - provided no answer. One fourth (25%) of the respondents preferred using printed literature. Only very few respondents indicated Cochrane Library, Medline (PubMed), Tripdatabasa as preferred Internet sources of information, with 40% indicating Google and 60% - other sources.

The results of post-training survey showed that nearly 90% of the respondents gave correct answers to all the questions.

With the aim to identify knowledge survival (the long-term training outcomes) we conducted the third survey in May 2014 in previously trained people at the seminar “Introduction to Evidence-Based Medicine”. The respondents were asked to answer 4 questions, and to assess previously obtained information on the basics of Evidence-Based Medicine on a 10-point scale.

We found that 100% of the respondents answered «Yes» to the question: «Have you changed your behavior after the seminar?» To the question: «Have you encountered difficulties in implementing the principles of evidence-based medicine in the educational process?» 56% of the respondents answered that they had not encountered any difficulties. The other 44% faced the difficulties associated with implementation of Evidence-Based Medicine: lack of understanding by students, low knowledge survival rate among students, too many questions from the students, difficult disputes and discussions.

To the question: «Have you encountered difficulties in implementing the principles of Evidence-Based Medicine in practical health-care?» only 37.5% of the respondents answered that they had not encountered difficulties. But the remaining 62.5% of the respondents faced the problems and difficulties in implementing the principles of evidence-based medicine in their practice. These were: failure in implementing, lack of understanding on the part of colleagues, commitment to traditional obsolete methods of treatment, discrepancy between some of the existing standards of diagnosis and treatment and principles of evidence-based medicine.

To the question: «Are there any end products after listening to the seminar?» 67% of the respondents answered in affirmative. The end products were mainly marked by the publication of articles and abstracts, including international publications, and participation in the working group on the revision and development of clinical protocols.

**CONCLUSIONS:** Barriers to implementation of Evidence-Based Medicine in education and practice are lack of funding to provide access to reliable sources of information, websites; outdated research methodology skills in medical education, lack of skills in critical evaluation of medical information; tradition of authoritarian relationships, use of past experience stencils; failure to comply with continuing education programs (“from training to professional development”). Knowledge of Evidence-Based Medicine, skills to perform searches for scientific data, to evaluate their validity and to transform scientific data into practical solutions are necessary for health workers in their daily activities. This culture needs to be rooted in modern medical education.

Keywords: Evidence-based medicine, training, education, practice, survey, questionnaire